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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,506	10/29/2003	Sheldon Aronowitz	02-5804/LSIIP212	8055

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LSI LOGIC CORPORATION
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EXAMINER

CHEN, BRET P

ART UNIT PAPER NUMBER

1762

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,506

Applicant(s)

ARONOWITZ ET AL.

Examiner

B. Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-28 is/are pending in the application.
- 4a) Of the above claim(s) 19-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-18 and 23-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-12, 14-28 are pending in this application. Amended claims 1-4, 7-8, 14; canceled claim 13; and newly added claims 23-28 are noted.

The amendment dated 12/14/05 has been entered and carefully considered. The examiner appreciates the amendment to the title and claims. In view of said amendment, the objection to the title has been withdrawn and the previous art rejection have been withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 25-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, the phrase “selectively ionizing the vaporized metallic element or salt to generate a plasma” is deemed new matter. While selectively ionizing is briefly mentioned on p.8, there appears to be no support for said phrase in the specification as originally filed. The same issue applies to claims 25-28.

Claims 1 and 25-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claim 1, the phrase “selectively ionizing the vaporized metallic element or salt to generate a plasma” does not enable one skilled in the art to selectively ionize a material without undue experimentation. The same issue applies to claims 25-28.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 25, the limitation of selectively ionizing to generate a plasma by selectively photo-ionizing is deemed vague and confusing. It is first noted that it is not clear how this is accomplished. Secondly, photo-ionizing does not necessarily generate a plasma. Thirdly, photo-ionizing is not further limiting to generating a plasma.

In claim 26, the limitation of further comprising generating an ion beam from the selectively ionized material is deemed vague and confusing. It is not clear how one can generate a plasma and then generate an ion beam.

In claim 28, the limitation of depositing a layer is deemed vague and confusing. It is not clear how an implanted material from dependent claim 27 can form a layer.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 2-12, 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oren et al. (4,742,022). Oren discloses a method of introducing zinc into a semiconductor material such as gallium arsenide in which a composition zinc gallium arsenide is placed in an open-tube furnace next to a body of gallium arsenide or aluminum gallium arsenide (col.1 lines 37-47). Specifically, the assemblage is heated while flowing an inert gas through the open-tube furnace to vaporize zinc (lines 47-50). The temperature can be between 500-650°C (col.2 lines 52-53). It is the examiner's position that when the inert gas is inserted into the open tube furnace, it will be heated. However, the reference fails to teach transporting the vaporized material into a temperature-controlled processing chamber.

It is noted that the reference clearly teaches of vaporizing a material in the presence of a heated inert gas in the processing chamber. One skilled in the art would reasonably expect that if this was done before insertion into a processing chamber that the subsequent result would be similar. It would have been obvious to transport the vaporized material with the expectation of obtaining similar results.

The limitations of claims 2-12, 14-18, 23-28 have been addressed above.

Claims 2-12, 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kogai et al. (6,416,862). Kogai discloses a method of producing ultrafine particulates of zinc oxide by flowing zinc vapor along with a carrier gas composed of an inert gas into a reactor,

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simultaneously flowing an oxidizing gas containing oxygen and steam into the reactor to oxidize the zinc vapor, and quickly cooling it (col.1 lines 15-28). Specifically, metallic zinc as a raw material is fed from the raw material feeder 1 and fed to the raw material vaporizer along with an inert gas such as argon (col.4 lines 16-22) and subsequently introduced into the reactor (col.4 lines 36-51). In one embodiment, the inert gas can be heated in advance to a temperature of about 500-1,000°C (col.4 lines 24-27). However, the reference fails to teach depositing a material on a substrate.

It is noted that the reference teaches of collecting the particles on a produce collector 8 (col.6 lines 42-43). One skilled in the art would realize that deposition is a similar process in the fact that the material adheres to a substrate. It would have been obvious to one skilled in the art utilize Kogai's process for depositing a coating with the expectation of success.

The limitations of claims 2-12, 14-18, 23-28 have been addressed above.

Allowable Subject Matter

Claims 1 and 23-28 are allowed. The prior art references fail to teach vaporizing a metallic element or metallic element salt, transporting said material, and selectively ionizing said material to generate a plasma.

Response to Arguments

Applicant's arguments with respect to claims 1-12, 14-18, 23-28 have been considered but are moot in view of the new ground(s) of rejection.

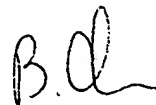
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. Chen whose telephone number is (571) 272-1417. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bc
3/5/06

A handwritten signature in black ink, appearing to read "B. Chen", with a stylized flourish at the end.

BRET CHEN
PRIMARY EXAMINER